

4. The respiratory movements approach the normal when after destruction of the semicircular canals the cochlea is extirpated.

5. Respiratory movements reflect very sensitively the impressions made upon the ear so that they may be employed as a sort of test of auditory sensitiveness.

6. In this manner one may demonstrate how sensitive the acoustic nerve is to auditory impressions.

7. Partial lesions of, or total lesions of, the organ of hearing impress permanent functional disturbances upon the bulbar centres.

8. These lesions are more severe if partial than if total.

9. The intensity is in correspondence with the severity of the disorders of equilibrium and movement

There seems to be a sort of functional antagonism between the semicircular canals and the cochlea. Of this they will treat more thoroughly in a work soon to be published on the cerebral influence of phenomena consequent upon lesions of the internal ear.

F. H. P.

PATHOLOGICAL.

Abstract of the Theory of the Mechanism of Cerebral Injury by Contre-Coup, (*The Birmingham Medical Review*, January, 1894.)—Prof. F. J. Allen, of Birmingham, England, in a paper read before the British Medical Association on the theory of the mechanism of the cerebral injury by contre-coup, offers the following: When the skull is struck forcibly at a particular region—say the occipital—the comparatively rigid cranium is driven, as a whole, away from the point of impact (forward in this case), the brain, owing to its softness, lags behind, and tends to flatten itself against the cranial wall on the struck side (occipital). This may cause direct injury. But the cranial wall here supports the brain substance and distributes the force of the blow over a wide area, rendering the injury less acute. The chief injury occurs on the opposite side (frontal), where the lagging brain tends to move away from the cranial wall and receive no support from it. At the centre of the unsupported surface there is a point where the soft brain substance is tending to depart in all directions in the act of flattening itself. At this point of greatest strain the rupture will occur. After the first rupture, waves of oscillations will follow, and these may increase

the injury. If detachments of the dura mater can be caused by contre-coup, as some observers have maintained, it should be the result of exhaust or suction at the moment when the brain recedes from the inner surface of the cranium. This so-called contre-coup detachment of the dura mater is said to take place only in the squamous region, where the dura mater is not so strongly attached to the bone as in other regions. F.H.P.

Etiology of Trigeminal Neuralgia.—(*Medicinishe Neuigkeiten*, No. 50, 1893). Dr. Hoennecken states the well-known fact that lesions of the teeth may provoke trigeminal neuralgia. They are generally found carious or there are stumps and roots which irritate the root nerves, but again there may be an entire absence of any apparent anomalous abnormality of the teeth. The dental pulp in such cases is the part affected. This affection is liable to give rise to rebellious neuralgias; therefore, it is necessary to know how to diagnose and treat them. He relates several such observations of this class where, though the tooth was seemingly normal to the naked eye, yet on microscopic examination, the pulp was found to be hyperemic, or to contain calcareous concretions. Therefore, in cases of neuralgia, one should carefully examine each tooth, and if one be suspected, drill into it and examine it.—*Gazette Hebdomadaire de Médecine et de Chirurgie*, No. 3, 1894.

Dr. F. Busch, of Vienna, presents the following differential diagnostic points in the recognition of the two varieties of toothache: that from inflammation of the pulp, pulpitis, and that dependent upon periodontitis. Pulpitis is one of the chief causes of toothache. Cold drinks and cold air increase the pain, while warm ones do not affect it; it is not sensitive to pressure; the pains radiate into the upper branches of the trigeminus, passing into the temple, eye, ear, even into the entire head and back of the neck. It is often confounded with rheumatic pains, and is very prone to pass over into periodontitis. Periodontitis is characterized by increase of the toothache by warm fluids, the patient will hold cold water in his mouth to ease the pain; the tooth is very sensitive to pressure so that the patient can distinctly point out the aching tooth, while in pulpitis he may be uncertain, and is even liable not to know which is the aching one. The soft parts swell generally on the second or third day, and may be followed by suppuration. A sen-